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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,343	08/16/2001	Hiroaki Muroya	09792909-5159	2634

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EXAMINER

SEFER, AHMED N

ART UNIT	PAPER NUMBER
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2826

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/931,343	<b>Applicant(s)</b> MUROYA, HIROAKI	
	<b>Examiner</b> A. Sefer	<b>Art Unit</b> 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 4, 13-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
 1. ☒ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of Embodiment 1 (claims 1-3 and 5-12) is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### *Specification*

2. Claims 2, 3, 11 and 12 are objected to because of the following informalities: Since it is the portions of said focusing layer which are being irradiated with light, the limitation "wherein the step of irradiating the light ..." recited in claims 2 and 11 reads as if it is the light which is being irradiated. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation "wherein the step of, includes a step of irradiating at least two, beams having different angles with respect to a normal direction perpendicular to the light irradiated surface of said first substrate." recited in claims 3 and 12 is not disclosed in the specification to enable one skilled in the art to make and/or use the invention. Without this information it would take undue experimentation to make and use the claimed invention.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. Claims 1, 2 and 5-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Yotsuya et al. USPN 6,469,832.

Yotsuya et al disclose in figs. 1 and 5-8 a method of producing micro-lenses, including the steps of: forming a plurality of pixel electrodes 172 on a first light transmitting type substrate 171 to form a first substrate; forming counter electrodes 12 on a second light transmitting type substrate 2 to form a second substrate; forming a light blocking layer 11 having apertures 111 in at least portions corresponding to said pixel electrodes on at least one of said first and second substrates; bonding peripheries of said first and second substrates so that said pixel electrodes and said counter electrodes face each other with a clearance therebetween; forming a focusing layer 91/92 containing a photosensitive material on a surface of said second substrate facing said bonding surface; irradiating light from said first substrate side to expose and cure the portions of said focusing layer facing the apertures of said light blocking film by light transmitted through the apertures of said light blocking layer; and removing uncured portions of said focusing layer, to thereby form the cured portions of said focusing layer as micro-lenses 4 for

focusing the light incident from said focusing layer side to the apertures of said light blocking layer.

The prior art reads into the limitation “a step of using parallel beams as the light” recited in claim 2.

As for claim 5, Yotsuya et al. disclose (see col. 15, lines 37-39) a step of forming said focusing layer by an ultraviolet curing resin and, a step of irradiating light from said first substrate side, includes a step of irradiating ultraviolet light as said light.

As for claim 6, Yotsuya et al. disclose (see col. 16, lines 47-59) a step of injecting a substance having an electrooptic effect into the clearances between the pixel electrodes and counter electrodes to form a layer of the substance.

As for claim 7, Yotsuya et al. disclose a step of injecting a liquid crystal composition as said substance to form a liquid crystal layer.

As for claim 8, Yotsuya et al. disclose a step of injecting a substance having an electrooptic effect into the clearances between the pixel electrodes and counter electrodes to form a layer of the substance.

As for claim 9, Yotsuya et al. disclose a step of injecting a liquid crystal composition as said substance to form a liquid crystal layer.

7. Claims 10 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Yotsuya et al. USPN 6,469,832.

Yotsuya et al. disclose in figs. 1 and 5-8 method of producing an image display device, including the steps of: forming a plurality of pixel electrodes 172 on a first light transmitting type substrate and forming a switching element 173 connected to the pixel electrodes to form a

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first substrate 171; forming counter electrodes 12 on a second light transmitting type substrate 2 to form a second substrate; forming on at least one of said first substrate and said second substrate a light blocking layer 11 covering said switching element and clearances among said pixel electrodes and having apertures 111 at least at portions corresponding to said pixel electrodes; bonding peripheries of said first and second substrates so that said pixel electrodes and said counter electrodes face each other with a clearance therebetween; forming a focusing layer 91/92 containing a photosensitive material on a surface of said second substrate facing said bonding surface; irradiating light from said first substrate side to expose and cure the portions of said focusing layer facing the apertures of said light blocking film by the light transmitted through the apertures of said light blocking layer; and removing uncured portions of said focusing layer, to thereby form the cured portions of said focusing layer as micro-lenses 4 for focusing the light incident from said focusing layer side to the apertures of said light blocking layer.

The prior art reads into the limitation “a step of using parallel beams as the light” recited in claim 11.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 1, 3 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamanaka USPN 6,031,591 in view of Zimmerman et al. USPN 5,598,281.

Hamanaka discloses in figs. 2-6 a method of producing micro-lenses, including the steps of: forming a plurality of pixel electrodes 23 on a first light transmitting type substrate 21 to form a first substrate; forming counter electrodes 25 on a second light transmitting type substrate 11 to form a second substrate; forming a light blocking layer 24 having apertures in at least portions corresponding to said pixel electrodes on at least one of said first and second substrates; bonding peripheries of said first and second substrates so that said pixel electrodes and said counter electrodes face each other with a clearance therebetween; and forming micro-lenses 12 for focusing the light incident from a focusing layer side to the apertures of said light blocking layer, but do not specifically disclose the method of forming said micro-lenses.

Zimmerman et al disclose in fig. 15 a method of forming a focusing layer 114 containing a photosensitive material on a surface of a substrate; irradiating light from another substrate side to expose and cure the portions of said focusing layer film by light transmitted through the apertures of a light blocking layer 108; and removing uncured portions of said focusing layer, to thereby form the cured portions of said focusing layer as micro-lenses.

Therefore, it would have been obvious to one skilled in the art at time the invention was made to incorporate the teachings of Zimmerman et al with Hamanaka's device since that would provide an energy efficient device.

As for claim 3, as understood, Zimmerman et al disclose (see col. 10, lines 40-62) a step of irradiating at least two beams having different angles with respect to a normal direction perpendicular to the light irradiated surface of said first substrate.

As for claim 5, Hamanaka discloses a step of forming said focusing layer by an ultraviolet curing resin and, a step of irradiating light from said first substrate side, includes a step of irradiating ultraviolet light as said light.

As for claim 6, Hamanaka discloses a step of injecting a substance having an electrooptic effect into the clearances between the pixel electrodes and counter electrodes to form a layer of the substance.

As for claim 7, Hamanaka discloses a step of injecting a liquid crystal composition as said substance to form a liquid crystal layer.

As for claim 8, Hamanaka discloses a step of injecting a substance having an electrooptic effect into the clearances between the pixel electrodes and counter electrodes to form a layer of the substance.

As for claim 9, Hamanaka discloses a step of injecting a liquid crystal composition as said substance to form a liquid crystal layer.

10. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamanaka USPN 6,031,591 in view of Zimmerman et al. USPN 5,598,281.

Hamanaka discloses in figs. 2-6 method of producing an image display device, including the steps of: forming a plurality of pixel electrodes 23 on a first light transmitting type substrate and forming a switching element 24 connected to the pixel electrodes to form a first substrate 21; forming counter electrodes 25 on a second light transmitting type substrate 11 to form a second substrate; forming on at least one of said first substrate and said second substrate a light blocking layer 24 covering said switching element and clearances among said pixel electrodes and having apertures at least at portions corresponding to said pixel electrodes; bonding peripheries of said



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first and second substrates so that said pixel electrodes and said counter electrodes face each other with a clearance therebetween; and forming micro-lenses 12 for focusing the light incident from a focusing layer side to the apertures of said light blocking layer, but do not specifically disclose the method of forming said micro-lenses.

Zimmerman et al disclose in fig. 15 a method of forming a focusing layer 114 containing a photosensitive material on a surface of a substrate; irradiating light from another substrate side to expose and cure the portions of said focusing layer film by light transmitted through the apertures of a light blocking layer 108; and removing uncured portions of said focusing layer, to thereby form the cured portions of said focusing layer as micro-lenses.

Therefore, it would have been obvious to one skilled in the art at time the invention was made to incorporate the teachings of Zimmerman et al with Hamanaka's device since that would provide an energy efficient device.

As for claim 12, as understood, Zimmerman et al disclose (see col. 10, lines 40-62) a step of irradiating at least two beams having different angles with respect to a normal direction perpendicular to the light irradiated surface of said first substrate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915.

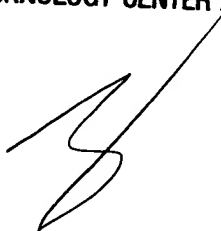
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2800.

ANS

February 18, 2004

**NATHAN J. FLYNN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**

A handwritten signature in black ink, appearing to be 'N. Flynn', written over the printed name and title.